



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
22.07.2020 Bulletin 2020/30

(43) Date of publication A2:
10.06.2020 Bulletin 2020/24

(21) Application number: **19196958.3**

(22) Date of filing: **12.09.2019**

(51) Int Cl.:
A63F 13/497 ^(2014.01) **A63F 13/50** ^(2014.01)
A63F 13/424 ^(2014.01) **A63F 13/67** ^(2014.01)
A63F 13/86 ^(2014.01) **G06N 20/00** ^(2019.01)
G06K 9/00 ^(2006.01)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

(30) Priority: **05.12.2018 GB 201819865**

(71) Applicant: **Sony Interactive Entertainment Inc.**
Tokyo 108-0075 (JP)

(72) Inventors:
• **DAREDDY, Sashikanth**
London, W1F 7LP (GB)
• **SPENCER, Hugh Alexander Dinsdale**
London, W1F 7LP (GB)

(74) Representative: **D Young & Co LLP**
120 Holborn
London EC1N 2DY (GB)

(54) **METHOD AND SYSTEM FOR GENERATING A RECORDING OF VIDEO GAME GAMEPLAY**

(57) A method of generating a recording of video game gameplay is provided. The method comprising receiving video game data generated during the playing of a video game, the video game including at least a video and corresponding audio signal. The method also comprises inputting each signal in the received video game data into a respective machine learning model and determining based on the output of each model, whether a highlight event has occurred during the playing of the video game. At least some of the frames in the video and or audio signal are then selected for inclusion in a recording of the video game gameplay, based on a determination that a highlight event has occurred and a recording is generated that includes the selected video and or audio frames. A method for training the models is also provided, along with systems for training and executing the trained models.

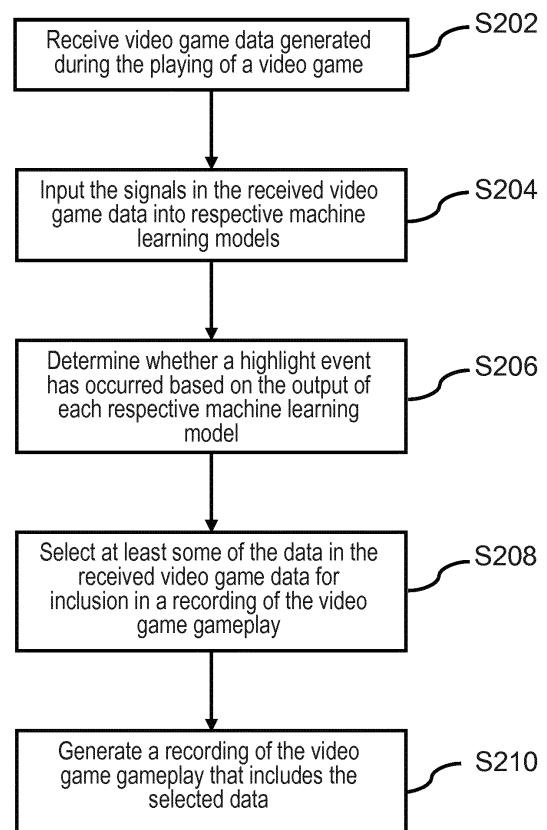


Figure 2

**PARTIAL EUROPEAN SEARCH REPORT**

Application Number

under Rule 62a and/or 63 of the European Patent Convention.
This report shall be considered, for the purposes of
subsequent proceedings, as the European search report

EP 19 19 6958

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2017/157512 A1 (LONG JIEYI [US] ET AL) 8 June 2017 (2017-06-08)	1,3-5,9, 10,12	INV. A63F13/497
Y	* paragraphs [0011], [0085], [0096], [0098], [0105], [0112], [0113], [0118], [0122] *	2,6,11	A63F13/50 A63F13/424 A63F13/67 A63F13/86
Y	US 2009/208181 A1 (COTTRELL DAVID [US]) 20 August 2009 (2009-08-20) * paragraph [0018] *	1,2,4,5, 9-11	G06N20/00 G06K9/00
Y	MARKUS MÜHLING ET AL: "Semantic video analysis for psychological research on violence in computer games", 6TH ACM INTERNATIONAL CONFERENCE ON IMAGE AND VIDEO RETRIEVAL (CIVR 2007) : AMSTERDAM, THE NETHERLANDS, 9 - 11 JULY 2007, ACM, 2 PENN PLAZA, SUITE 701 NEW YORK NY 10121-0701 USA, 9 July 2007 (2007-07-09), pages 611-618, XP058334897, DOI: 10.1145/1282280.1282367 ISBN: 978-1-59593-733-9 * abstract; figures 1,5 *	1,2,4,5, 9-11	
----- -/--			TECHNICAL FIELDS SEARCHED (IPC)
			A63F G06N G06K

INCOMPLETE SEARCH

The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC so that only a partial search (R.62a, 63) has been carried out.

Claims searched completely :

Claims searched incompletely :

Claims not searched :

Reason for the limitation of the search:

see sheet C

2

EPO FORM 1503 03.82 (P04E07)

Place of search	Date of completion of the search	Examiner
Munich	10 June 2020	Fischer, Jan
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document		



PARTIAL EUROPEAN SEARCH REPORT

Application Number

EP 19 19 6958

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
Y	WO 2017/160932 A1 (SKILLZ INC [US]) 21 September 2017 (2017-09-21) * paragraphs [0032], [0033], [0040] *	6	
Y	WO 2017/218303 A1 (SONY INTERACTIVE ENTERTAINMENT LLC [US]) 21 December 2017 (2017-12-21) * paragraphs [0020], [0169], [0170] *	6	
A	DOBROVSKY ALINE ET AL: "Deep Reinforcement Learning in Serious Games: Analysis and Design of Deep Neural Network Architectures", 26 January 2018 (2018-01-26), INTERNATIONAL CONFERENCE ON FINANCIAL CRYPTOGRAPHY AND DATA SECURITY; [LECTURE NOTES IN COMPUTER SCIENCE; LECT.NOTES COMPUTER], SPRINGER, BERLIN, HEIDELBERG, PAGE(S) 314 - 321, XP047460932, ISBN: 978-3-642-17318-9 [retrieved on 2018-01-26] * Sec. 2.1, penultimate para. *	1-5,9-12	
A	US 2017/228600 A1 (SYED ZIA [US] ET AL) 10 August 2017 (2017-08-10) * paragraphs [0042], [0050], [0061], [0062], [0075] *	1-5,9-12	
			TECHNICAL FIELDS SEARCHED (IPC)

2
EPO FORM 1503 03.82 (P04C:10)

**INCOMPLETE SEARCH
SHEET C**

Application Number

EP 19 19 6958

5

Claim(s) completely searchable:
1-6, 9-15

10

Claim(s) not searched:
7, 8

Reason for the limitation of the search:

15

The search has been restricted to the subject-matter indicated by the applicant in his letter of 17.03.2020 filed in reply to the invitation pursuant to Rule 62a(1). The search report and opinion were thus limited to claims 1-6 and 9-15 (before any further considerations concerning unity of invention).

20

25

30

35

40

45

50

55



Application Number

EP 19 19 6958

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☒ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

1-6, 9-12

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

EP 19 19 6958

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-5, 9-12

Machine learning analysis of audio-visual game output and game telemetry for automatic highlight video assembly.

2. claim: 6

Compilation of a highlight reel depicting other players' previous gameplay.

3. claims: 13-15

Feature clustering and manual labelling for event recognition.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 19 19 6958

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10-06-2020

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2017157512 A1	08-06-2017	NONE	
US 2009208181 A1	20-08-2009	CN 101990451 A	23-03-2011
		CN 104288992 A	21-01-2015
		EP 2240251 A1	20-10-2010
		JP 5465680 B2	09-04-2014
		JP 2011516103 A	26-05-2011
		KR 20100114131 A	22-10-2010
		US 2009208181 A1	20-08-2009
		US 2012134651 A1	31-05-2012
		WO 2009102991 A1	20-08-2009
WO 2017160932 A1	21-09-2017	CA 3017748 A1	21-09-2017
		CN 109152957 A	04-01-2019
		EP 3429712 A1	23-01-2019
		JP 2019511873 A	25-04-2019
		KR 20190005832 A	16-01-2019
		US 2017266549 A1	21-09-2017
		US 2018280796 A1	04-10-2018
		US 2019358538 A1	28-11-2019
		WO 2017160932 A1	21-09-2017
WO 2017218303 A1	21-12-2017	CN 109479163 A	15-03-2019
		EP 3469804 A1	17-04-2019
		JP 2019517883 A	27-06-2019
		WO 2017218303 A1	21-12-2017
US 2017228600 A1	10-08-2017	NONE	